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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/546,735      | 04/11/2000  | Georg Lucers         | W-9465-02           | 4363             |

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08/15/2002

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EXAMINER

BERMAN, SUSAN W

ART UNIT

PAPER NUMBER

1711

13

DATE MAILED: 08/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

TC-13

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 09/546,735             | LUEERS ET AL.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Susan W Berman         | 1711                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10,20-23,25 and 27-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10,20-23,25 and 27-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

***Response to Amendment***

The amendment filed 07-05-2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: With respect to claim 1, the examiner has not found a disclosure of a particle size from 2 to 6 microns in the specification. The specification discloses from 2.0 to 12.0 microns particle size and from 2.0 to 5.0 microns as the preferred particle size.

Applicant is required to cancel the new matter in the reply to this Office Action.

The amendment to the specification on page 4, line 20, has not been entered. Applicant is required to submit a clean copy of the paragraph on page 4 containing the amendment. The clean copy of page 4 will not be entered.

***Response to Arguments***

Applicant's arguments filed 07-05-2002 have been fully considered but they are not persuasive.

The specification has been amended to overcome the lack of antecedent basis for claim 2.

The rejection of claim 41 under 365 USC 112, first paragraph is maintained because applicant has disclosed only one matting agent, wax coated silica as defined in the specification. The example on page 9 contains 10% matting agent; there is no mention of less than or about 12 % matting agent. Figure 7 is the only disclosure of the relationship between gloss and 12% matting agent noted by the examiner.

The rejection of claims 30, 34 and 38 under 35 USC 112, second paragraph, is maintained because the phrase "curable component comprises acrylate" is indefinite. See the rejection set forth below. As applicant states in paper number 12, page 3, the word "acrylate" refers to acrylate functionality.

The rejection of claims 31, 39, 40 and 41 under 35 USC 112, second paragraph, is maintained. In order to obtain a coating on a substrate, the coating composition must be cured or polymerized. It is the examiner's position that the claims should clearly recite that the coating is obtained by curing the

Art Unit: 1711

composition. Furthermore, as set forth in the rejection below, it is suggested that the components of the composition be clearly recited as components of the composition (before curing) rather than of the coating since curing polymerizes the acrylate-functional substances.

The rejection of claims 1-10 as being anticipated by Aldcroft et al is maintained for the reasons set forth in the rejection. It is agreed that Aldcroft et al anticipate the matting agents set forth in the instant claims wherein the particle size of the matting agent, wax content of the matting agent and pore size of the silica are overlapping in scope. Aldcroft et al do not anticipate the instantly claimed matting agents wherein the average particle size is about 3 microns and the wax content is about 30%. However, there are no claims limited to such matting agents. The disclosure of Aldcroft et al encompasses a matting agent having an average particle size of 5 microns and a wax content of about 18-20%. The disclosure of Aldcroft et al is not limited to the examples. Applicant argued in paper number 10 that Aldcroft et al disclose examples wherein wax amounts up to 10% are used with a silica particle size of 6 microns and suggest that best results are obtained when using wax contents in the range of 5-15 % and, therefore, do not anticipate the instant claims. This argument is not persuasive because the disclosure of Aldcroft et al is not limited to the examples or to the best results. Aldcroft et al teach mean particle size, % wax content and silica pore volume overlapping the instantly claimed ranges for each property.

Applicant argues that both WO '030 and Aldcroft et al teach away from matting agents containing 18% or more wax. This argument is not persuasive. WO '030 teaches 6-15 wt. % wax as a "preferable" embodiment. Aldcroft et al teach a wax coated silica matting agent wherein the wax content is from 5-20% w/w based on the weight of the silica to have the optimum effect and state that the upper levels of wt. % give the desirable features but are considered to be less cost effective (column 2, lines 5-48). Aldcroft et al teach wax coated silica having enhanced capability of preventing formation of hard sediment on storage and lower interaction between the matting agent and other components in a paint or lacquer (column 1, line 58, to column 2, line 4). Therefore, Aldcroft et al clearly teach using about 18-20

Art Unit: 1711

wt. % wax and that these levels give the desirable features disclosed. It is agreed that the references do not suggest wax content of about 30 wt. %. It is also noted that the references do not teach matting compositions comprising amine-modified polyether acrylates, urethane acrylates and free radical photoinitiators. The compositions disclosed by WO '030 comprise cycloaliphatic epoxy and cationic photoinitiators in addition to the vinyl ether or acrylate compounds.

The data presented in the tables and graphs in the instant specification has been considered and is considered persuasive of unexpected results obtained wherein wax coated silica matting agents according to the instant invention are employed in radiation curable coating compositions. The radiation curable compositions are represented by a urethane acrylate or an amine-modified polyether acrylate, each containing a photoinitiator. Comp 1 and Comp 3 are considered representative of the wax treated silica disclosed by WO '030. Comp 1, Comp 2, Comp 3 and Syloid ED30 are each considered representative of the "conventional matting agent" taught by WO '240. Applicant's data shows that better matting efficiency is obtained for the example according to the invention wherein the properties of the wax treated silica has an average particle size of 3.7, pore volume of 1.10 ml/g and wax content of 20% and wherein the wax coated silica is employed in the urethane acrylate or amine-modified polyether acrylate composition. The data is not considered sufficient to obviate the rejection over WO '030 set forth below. The showing is not representative of the radiation curable compositions disclosed by WO '030 or commensurate in scope with the instant claims. Claims 20-23, 25, 27-41 include a wax content of about 18 % to 30 % and an average particle size from about 2 to about 5 microns and a silica having a pore volume from 0.8 to 1.4 cc/g. There is no data to show the criticality of 18% wax compared with 15% wax or of 2-6 microns average particle size compared with 4-12 microns or of 0.8-1.4 ml/g pore volume compared with 1-2 ml/g pore size taught by WO '030.

***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the subject matter of original claims 8 and 9, specifically 0.9 to 1.2 cc/g pore volume of silica in the silica matting agent, lacks antecedent basis in the body of the specification.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 41 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a coating composition comprising an amine-modified polyether acrylate and a wax-treated silica matting agent having a maximum pore volume of 1.4 ml/g and a wax content of at least 15 % and a maximum of 30% by weight and a medium particle size in the range of 2.0 –12.0 microns, does not reasonably provide enablement for a coating composition comprising an amine-modified polyether acrylate and any known matting agent component in an amount of about 12% by weight or less. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. See page 4, lines 18-24, page 9 and Table 3. There is no disclosure of matting agents other than wax-treated silica matting agents having the properties set forth above

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1711

Claims 30-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 30, 32, 34-40: it is not clear what is meant by “curable component comprises acrylate”. What kinds of curable acrylate functional group-containing components are intended to be claimed? The word “acrylate” describes a functional group, not a compound or substance. If applicant intends to set forth “acrylate-containing compounds” as disclosed on page 7, it should be so stated. Claims 31, 39, 40, 41: It is not clear from the claim language whether applicant intends to set forth a coating or a composition with regard to the phrase “prepared from a coating”. How is the coating “prepared”? It is believed that the coating is obtained by curing (polymerizing) a composition... . It is suggested that claims 33 and 41 recite “substrate and coating thereon prepared from a composition comprising amine-modified polyether acrylate and about 12% by weight matting agent...”. The reason is that it is the coating is obtained by polymerizing (or curing) the composition that comprises the amine-modified polyether acrylate and matting agent, therefore the “coating” does not contain amine-modified polyether acrylate. In claim 33, it is not clear whether applicant intends to set forth the “matting efficiency” or the “gloss units” of the coating.

***Claim Rejections - 35 USC § 102/103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Aldcroft et al (5,326,395). Aldcroft et al disclose a wax coated silica matting agent wherein the pore volume is between 0.8 to 2.5 cc/g, the particle size is between 5-9 microns and the wax content is from 5-20% w/w based on the weight of the silica to have the optimum effect. See column 2. The matting agent set forth in the

Art Unit: 1711

instant claims is anticipated by wax coated silica disclosed by Aldcroft et al having the same properties as are recited in the instant claims. The instantly claimed matting agents are anticipated wherein the wax coated silica wherein the pore volume is between 0.8 to 1.4 cc/g, the wax content is from 18-20% and wherein the size is about 5 microns are anticipated by Aldcroft et al (see column 2, lines 59-63).

Claims 1-10, 20-23, 25, 27-29, 34-37, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/58030 in view of Aldcroft et al. WO '030 discloses a wax-coated silica wherein the pore volume is between 1.0 and 2.0 ml/g, the average particle size is between 4.0 and 12.0 microns and the wax coating preferably represents 6 to 15% by weight of the uncoated silica. See page 5, lines 4-19. The properties of the instantly claimed matting agent and the disclosed wax-coated silica overlap with respect to particle size from 4 to 12 microns and pore volume from 1.0 to 1.4 ml/g. WO '030 teaches adding a matting monomer selected from vinyl ether monomers and acrylate monomers to provide a matting paste for a photocurable system comprising cycloaliphatic or bisphenol A epoxy resins. WO '030 teaches that the wax coating preferably represents 6 to 15 % by weight of the uncoated silica in a preferred embodiment wherein the silica is coated with wax, while applicant claims a wax content of about 18 to 30% by weight of the silica.

Aldcroft et al disclose a wax coated silica matting agent wherein the pore volume is between 0.8 to 2.5 cc/g, the particle size is between 5-9 microns and the wax content is from 5-20% w/w based on the weight of the silica to have the optimum effect and states that the upper levels of wt. % give the desirable features but are considered to be less cost effective (column 2, lines 5-48). Aldcroft et al teach wax coated silica having enhanced capability of preventing formation of hard sediment on storage and lower interaction between the matting agent and other components in a paint or lacquer (column 1, line 58, to column 2, line 4).



Art Unit: 1711

With respect to claims 1-10, it would have been obvious to one skilled in the art to provide a wax coated silica matting agent having an average particle size from about 4-12 microns, as taught by WO '030, a wax content from about 5-20 %, as taught by Aldcroft et al, and silica having a pore volume from 0.8 to 2.5, as taught by Aldcroft et al. The reason is that both references teach analogous matting agents for polymerizable coating compositions wherein the matting agent is a wax coated silica. The average particle sizes, wax contents and silica pore volumes taught in the references overlap in scope. One of ordinary skill in the art at the time of the invention would have immediately envisioned matting agents wherein the particle size, wax content and silica pore volume could be as taught by either reference and that would have been expected to function effectively as matting agents in polymerizable compositions.

It would have been obvious to one skilled in the art at the time of the invention to employ a wax coated silica having a wax content higher than 15% based on the weight of the silica as the wax coated silica in the photocurable compositions disclosed by WO '030 because WO '030 does not limit the amount of wax coated silica to be used to the preferred 6 to 15 % by wt of silica. It would have been obvious to one skilled in the art at the time of the invention to employ a wax coated silica having a wax content of 5-20% based on the weight of the silica, as taught by Aldcroft et al, as the wax coated silica in the photocurable compositions disclosed by WO '030 for the following reasons. WO '030 teaches that the wax coating preferably represents 6 to 15 % by weight of the weight of the uncoated silica, thus the weight % wax is not limited to the preferred 6 to 15%. Aldcroft teaches a wax coated silica matting agent wherein the pore volume is between 0.8 to 2.5 cc/g, the particle size is between 5-9 microns and the wax content is from 5-20% w/w based on the weight of the silica has an optimum effect and that the upper levels provide the desirable features. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of providing a useful matting agent for the compositions taught by WO '030 because the silica matting agent disclosed by Aldcroft et al meets the pore volume, average particle size and wax content parameters of the matting agent disclosed by WO '030. With respect to

Art Unit: 1711

claim 34, it would have been obvious to one skilled in the art to employ wax coated silica having a wax content in the range of about 15 to 20 % by weight of silica, as taught by Aldcroft. With respect to claims 34-37, 39 and 40, it would have been obvious to one skilled in the art to select acrylate monomers to prepare a matting paste as taught by WO '030 because WO '030 teaches that either vinyl ether monomers or acrylate monomers are effective.

***Allowable Subject Matter***

Claim 41 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. The cited references do not teach compositions comprising an amine-modified polyether acrylate.

Claim 30, 32, 33, 38 and 40 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. With respect to claims 30, 32 and 38, the cited references do not teach compositions comprising less than or about 2% by weight of the matting agent. With respect to claim 33, WO '030 does not teach compositions comprising an amine-modified polyether acrylate or using less than or about 12% of the matting agent. With respect to claim 40, WO '030 does not teach coatings obtained from compositions as set forth in claim 34 and having a gloss of about 20 gloss units or less at 60°.

***Irradiated Papers***

The papers filed on January 24, 2002 (certificate of mailing dated December 17, 2001 ) have not been made part of the permanent records of the United States Patent and Trademark Office (Office) for this application (37 CFR 1.52(a)) because of the damage from the United States Postal Service irradiation process. The above-identified papers, however, were not so damaged as to preclude the USPTO from making a legible copy of such papers. Therefore, the Office has made a copy of these papers, substituted them for the originals in the file, and stamped that copy:

COPY OF PAPERS  
ORIGINALLY FILED

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If applicant wants to review the accuracy of the Office's copy of such papers, applicant may either inspect the application (37 CFR 1.14(d)) or may request a copy of the Office's records of such papers (*i.e.*, a copy of the copy made by the Office) from the Office of Public Records for the fee specified in 37 CFR 1.19(b)(4). Please do **not** call the Technology Center's Customer Service Center to inquire about the completeness or accuracy of the Office's copy of the above-identified papers, as the Technology Center's Customer Service Center will **not** be able to provide this service.

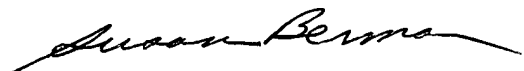
If applicant does not consider the Office's copy of such papers to be accurate, applicant must provide a copy of the above-identified papers (except for any U.S. or foreign patent documents submitted with the above-identified papers) with a statement that such copy is a complete and accurate copy of the originally submitted documents. If applicant provides such a copy of the above-identified papers and statement within **THREE MONTHS** of the mail date of this Office action, the Office will add the original mailroom date and use the copy provided by applicant as the permanent Office record of the above-identified papers in place of the copy made by the Office. Otherwise, the Office's copy will be used as the permanent Office record of the above-identified papers (*i.e.*, the Office will use the copy of the above-identified papers made by the Office for examination and all other purposes). This three-month period is not extendable.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Berman whose telephone number is (703) 308-0040.

The fax number for this group is (703) 872-9310 or, for submissions after Final Rejection, (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist at telephone number (703) 308-0661.



Susan Berman  
Primary Examiner  
Art Unit 1711